

16

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

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Exh A-D
ORIGINAL
Attach.

UNITED STATES OF AMERICA and FRANK
J. KELLEY, ATTORNEY GENERAL FOR THE
STATE OF MICHIGAN, EX REL MICHIGAN
NATURAL RESOURCES COMMISSION, AND
DIRECTOR OF THE MICHIGAN
DEPARTMENT OF NATURAL RESOURCES,

Plaintiffs,

v.

Civil Action No.
87-70992
Hon. John Feikens

WAYNE COUNTY, MICHIGAN; CITY OF ALLEN
PARK; CITY OF BELLEVILLE; TOWNSHIP OF
BROWNSTOWN; CITY OF DEARBORN HEIGHTS;
CITY OF ECORSE; CITY OF LINCOLN PARK;
CITY OF RIVER ROUGE; CITY OF ROMULUS;
CITY OF SOUTHGATE; CITY OF TAYLOR;
TOWNSHIP OF VAN BUREN; CITY OF WYANDOTTE;
CITY OF RIVERVIEW; SOUTHGATE-WYANDOTTE
RELIEF DRAINAGE DISTRICT; AND ECORSE CREEK
POLLUTION ABATEMENT DRAIN,

Defendants.

U.S. DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
DETROIT, MI 48226

04 MAY 17 PM 4:27

FILED

DEFENDANTS' PETITION FOR DISPUTE RESOLUTION

Defendants, Wayne County, Michigan; City of Allen Park; City of Belleville;
Township of Brownstown; City of Dearborn Heights; City of Ecorse; City of Lincoln
Park; City of River Rouge; City of Romulus; City of Southgate; City of Taylor;
Township of Van Buren; City of Wyandotte; City of Riverview; Southgate-Wyandotte
Relief Drainage District; and Ecorse Creek Pollution Abatement Drain, pursuant to
Paragraph 42 of the Consent Decree entered in this matter, hereby petition the Court for

resolution of all outstanding disputes between the parties on issues of interpretation and compliance with the Consent Decree. In support of their Petition Defendants state:

1. For some time now, the parties have been engaged in informal dispute resolution regarding certain alleged effluent violations and Defendants' alleged inability to complete certain actions in accordance with the timeline set forth in the Consent Decree entered by the Court in this matter.

2. On October 17, 2003, Defendants submitted a proposed amendment of the Consent Decree to Plaintiffs in an effort to resolve these outstanding issues.

3. In response, on December 19, 2000, Plaintiffs submitted a counter-proposal with their proposed Amended and Restated Consent Decree.

4. In their December 19, 2003 proposed Amended and Restated Consent Decree, Plaintiffs sought to impose several additional requirements and/or obligations which Defendants contend were not contemplated by the original Consent Decree.¹

5. Specifically, Plaintiffs sought to impose a new requirement that Defendants conduct a study and produce a report outlining effluent violations that occurred in 2003 and specifying the development and implementation of recommended corrective measures undertaken by Defendants with respect to those prior violations ("the 2003 Effluent Violations Report").

6. Plaintiffs also sought to impose a new requirement that Defendants predict and/or anticipate "future" effluent violations and, among other things, submit a regular report identifying and establishing the "root cause" of anticipated future violations and

¹ On April 30, 2004 the Court entered an Order confirming the existing Consent Decree. Thus, the existing Consent Decree is still in full force and effect and its terms are binding on the parties.

any prospective corrective measures intended to address potential future violations. ("Preliminary Root Cause and Prospective Measures Report").

7. However, the Consent Decree entered by the Court already provides a set schedule of stipulated penalties for effluent violations. Thus, in the course of the informal dispute resolution process, the parties negotiated a penalty of \$515,000 in complete settlement and resolution of all violations of the consent decree through May 2003 (representing \$400,000 in settlement for all violations prior to January 2003, and \$115,000 in settlement for all effluent limit violations from January 2003 to May 2003). Defendants tendered payment of the agreed upon settlement amount of \$515,000 on March 22, 2004. Exhibit A.

8. Defendants also offered to pay additional stipulated penalties in the amount of \$25,000 for effluent violations from June 2003 to the present pursuant to the schedule of stipulated penalties set forth in the consent decree. Exhibit A, p 2.

9. On April 27, 2004 and April 28, 2004, the Court held a Settlement Conference to address, among other things, the disputed issues outlined in paragraphs 5-8 above. At the time, Defendants were fully willing and prepared to engage in good faith negotiations. Indeed, Defendants were under the impression that the parties were very close to a resolution. Plaintiffs, however, refused to compromise on any of their demands set forth in paragraphs 5 and 6 above. As a result of Plaintiffs' intransigence, the Settlement Conference was abruptly aborted by the Court and the parties were unable to resolve the outstanding issues.

10. On April 29, 2004, Plaintiffs served Defendants with a document setting forth Plaintiffs' final position with respect to the outstanding disputes. Exhibit B.

Specifically, in their April 29, 2004 letter, Plaintiffs withdrew all previous offers of compromise and essentially rejected the informal dispute resolution process. Defendants now invoke the formal dispute resolution process set forth in paragraph 42 of the Consent Decree.

11. Defendants propose the following resolution of the disputed issues set forth above:

- a. the submission to Plaintiffs of the attached 2003 Effluent Violations Report addressing prior effluent violations and steps taken to resolve those violations. Exhibit C.
- b. the submission of a report outlining the force majeure events underlying delays in the construction of the Wastewater Treatment Plant. Exhibit D. This Report will also serve to substantiate Defendants' calculation of stipulated penalties owed pursuant to the terms of the Consent Decree – an amount which has already been tendered to Plaintiffs but returned to Defendants
- c. In the future provide USEPA with a copy of all reports concerning effluent violations that are currently required pursuant to the Wyandotte Wastewater Treatment Plant NPDES permit.

For the foregoing reasons, and for the reasons outlined in the attached reports, Defendants respectfully request that the Court issue a determination that Defendants proposed resolution fulfills the terms and requirements of the Consent Decree and resolves the outstanding disputed issues.

Respectfully submitted,

BUTZEL LONG

By: James A. Gray III
Beth Gotthelf (P38951)
James A. Gray III (P54759)
100 Bloomfield Hills Pkwy., Suite 200
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(248) 258-1303
Attorneys for Defendants

Dated: May 17, 2004

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

UNITED STATES OF AMERICA and FRANK
J. KELLEY, ATTORNEY GENERAL FOR THE
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Civil Action No. 87-70992
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CITY OF RIVERVIEW; SOUTHGATE-WYANDOTTE
RELIEF DRAINAGE DISTRICT; AND ECORSE CREEK
POLLUTION ABATEMENT DRAIN,

Defendants.

PROOF OF SERVICE

Linda DeVault, being first duly sworn, deposes and says that on May 17, 2004,
she served copies of DEFENDANTS' PETITION FOR DISPUTE RESOLUTION and
Proof of Service upon:

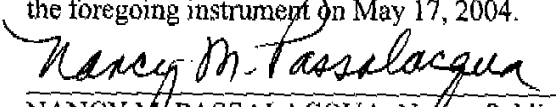
Annette M. Lang
Department of Justice
Environmental Enforcement Section
P.O. Box 7611
Ben Franklin Station
Washington, DC 20044-7611

**Pamela J. Stevenson
Assistant Attorney General
Natural Resources and Environmental Resources
Protection Division
Michigan Department of Attorney General
300 S. Washington Square #530
Lansing, MI 48913**

by enclosing same in envelopes, properly stamped and addressed, and by depositing said envelopes in a United States Mail receptacle located at 150 West Jefferson, Detroit, Michigan.


Linda DeVault

The signator is known to me and acknowledged the foregoing instrument on May 17, 2004.


NANCY M. PASSALACQUA, Notary Public
Wayne County, Michigan
My Commission Expires: 06/09/04

665179

A

BUTZEL LONG

a professional corporation
ATTORNEYS AND COUNSELORS

BETH S. GOTTHELF

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March 22, 2004

Via Hand Delivery

Annette M. Lang
Department of Justice
Environmental Enforcement Section
P.O. Box 7611
Ben Franklin Station
Washington, DC 20044-7611

**Re: United States et al. v. Wayne County, et al.
Proposed Amendment to Consent Decree**

Dear Annette:

We have reviewed your December 19, 2003 Draft Amended and Restated Consent Decree in response to Defendants' October 17, 2003 proposed Amendment. Defendants have discussed it with both the Joint Management Committee ("JMC") and Legal Committee. As you know, the JMC is made up of the elected officials from the 13 communities named as Defendants in the Consent Decree. The Legal Committee is made up of the legal representatives of the 13 communities. We note that there are many additional requirements in the new document. Also, the termination date has been significantly extended. As you have indicated to me previously, it is not the intent of the parties to have this case go on indefinitely. These additions are contrary to that intent.

There is also an issue as to "substantial compliance." You have indicated that the Plaintiffs want the Plant to comply with its permit discharge limits for twelve (12) months before the Consent Decree is allowed to terminate. You also recognized that the parties strongly desire such compliance and Defendants are working hard towards such compliance. Further, it is recognized that most large wastewater plants experience periodic minor exceedances. The Plaintiffs have indicated that the 12 month compliance requirement they are advocating means "substantial compliance" and does not include a periodic incidental minor exceedance. Plaintiffs said that they are willing to put this statement in a letter, and in fact, believe they have done so in a prior letter. However, Plaintiffs have been unwilling to define substantial compliance and incorporate this concept into the amended consent decree. Defendants insist that the amended consent decree reference "substantial compliance." Note, Riverview has

Annette M. Lang
March 22, 2004
Page 2

stated to me that it maintains its position that it will not agree to an amendment, as it has indicated to you previously.

Further, the draft consent decree includes a requirement to conduct a study due to prior exceedances at the plant and implement its recommendations. As has been discussed many times with Plaintiffs, especially at the monthly technical meetings, the primary cause of the exceedances is the glycol from the Airport. Basically, the plant is operating more efficiently since the completion of the improvements. As a result, it is more effectively removing nutrients in the primary treatment that are regulated in its discharge but are needed in the secondary treatment, to ensure the microorganisms in the secondary treatment remain healthy, especially due to glycol. Action has been taken to correct this issue. The studies identifying this problem have already been completed and forwarded to Plaintiffs. The primary report completed by glycol experts after the problem was identified was hand delivered to Plaintiffs on November 20, 2003 and sent to you with a status report of implementation of the report's recommendation on December 17, 2003. We assume that since it has been over four (4) months since Plaintiffs were given this report that they have no comment on it. The recommendations of the report are being implemented as described in the December 17th cover letter. In fact, the on-line CBOD analyzer has been received and the manufacturer has indicated the phosphorus on-line analyzer will be received the week of April 5th. Once received, the analyzers will be installed immediately. Installation is expected to take a few days. In summary, this provision is unnecessary as a study has been conducted, report issued and recommendations are being implemented.

We note that negotiations over the terms of the amended Consent Decree have been ongoing for some time and it appears that it may be difficult for the parties to resolve their differences in a timely manner. Therefore, in order to move this case forward, Defendants have decided to pay the penalty of \$515,000 negotiated for complete settlement and resolution of all violations of the consent decree through May, 2003. This payment is made for settlement purposes only and is not to be construed as an admission of liability. Payment pursuant to the consent decree is enclosed. Defendants believe that under the consent decree additional stipulated penalties in the amount of \$25,000 (this reflects \$5,000 in August and September, and \$15,000 in October) may be due for violations from June, 2003 to present. Defendants request that Plaintiffs indicate whether they agree with this amount for the time period of June 1, 2003 through February 1, 2004. If there is concurrence, then Defendants will make payment to Plaintiffs within 45 days of receiving written concurrence from Plaintiffs. If Plaintiffs believe a different amount is owed, please inform us of that amount immediately, along with an explanation of how the amount was determined.

Annette M. Lang
March 22, 2004
Page 3

We are hopeful that this strategy moves this case along. We look forward to hearing from you.

Sincerely,

BUTZEL LONG

Beth S. Gotthelf

BSG/jlk
Enclosure

Cc: Counsel of Record
Kurt Heise
Lavonda Jackson
Butler Benton
John Baratta
Firooz Fath-Azzam

B



U.S. Department of Justice

Environment and Natural Resources Division

90-5-1-1-2766

Environmental Enforcement Section
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April 29, 2004

VIA E-MAIL AND REGULAR MAIL

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Patrick McCauley
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Southfield, MI 48075-1100

Re: United States et al. v. Wayne County, et al.
Withdrawal of Prior Settlement Demands and Offers

Dear Ms. Gotthelf and Mr. McCauley,

This letter is to advise you that the United States and Michigan hereby formally withdraw all previous offers to compromise stipulated penalties and offers to settle non-compliance with the 1994 Consent Decree entered in the above-reference action. This withdrawal is consistent with the statements at the conclusion of my letters to the Court dated March 8, 2004, and March 12, 2004. In light of the fact that the United States and Michigan have tried to negotiate a resolution of this matter for over three years, including trying to resolve relief for new NPDES violations that occurred during the negotiations and including submitting for Defendants' consideration three drafts of proposed injunctive relief language, the negotiating process clearly has failed.

Sincerely,

Pamela J. Stevenson
Assistant Attorney General
Department of the Attorney General
State of Michigan

Annette M. Lang
Trial Attorney
Environmental Enforcement Section
United States Department of Justice

cc (by email):

Dr. Jonathan Bulkley
Susan Perdomo
Pam Stevenson

cc (by regular mail):

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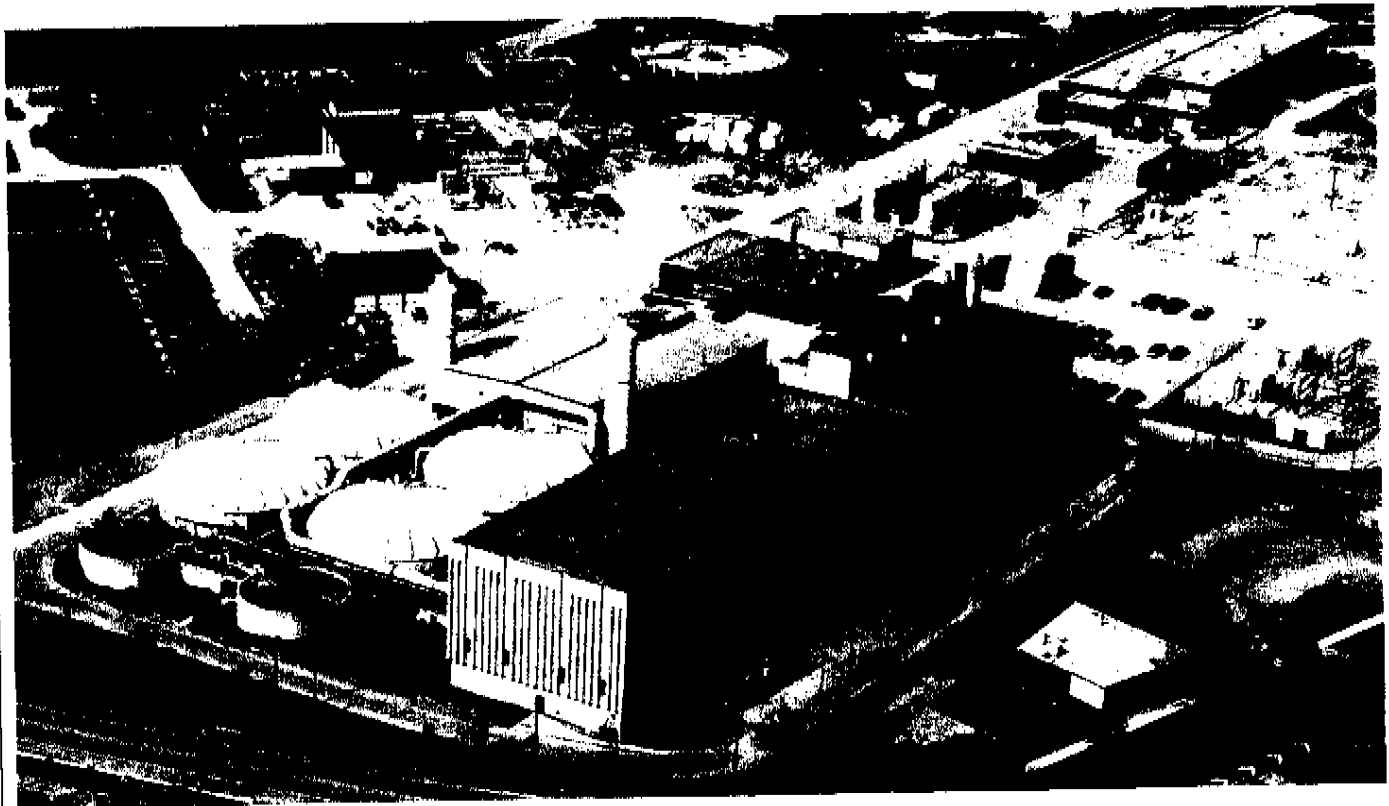
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e

2003 Effluent Noncompliance Resolution Report



Wayne County
Department of Environment
Facilities Management Division
Downriver Wastewater Treatment Facility

May 14, 2004

By

Firooz Fath-Azam, P.E., Downriver WWTF Superintendent

Background

In January 2003 the Downriver (formerly known as Wyandotte) WWTP started having problems meeting its N.P.D.E.S. permit limits. There were no permit violations in February 2003. However, in March 2003 the Downriver plant experienced difficulties meeting its N.P.D.E.S. permit limits and permit exceedances continued for three months until the end of May, 2003. The Plant returned to compliance for the June-July, 2003 period.

However, in August 2003, the Downriver Plant experienced another episode of noncompliance mainly due to the blackout that affected most of Eastern part of the United States.

The Plant also had some fecal coliform noncompliance periods in September and October of 2003.

Please note that all plaintiffs were provided a list of all noncompliances along with potential reasons for the noncompliances at the end of each month.

The Downriver Plant returned to compliance in December 2003 and has continued to meet its N.P.D.E.S. permit till the present time. For a summary of compliance for 2003 please see Table 1.

2003 Noncompliance and response chronology

January 2003

The Downriver WWTP did not meet its N.P.D.E.S. permit limits for the below listed parameters.

PARAMETER	LIMIT	ACTUAL
CBOD ₅ 7-Day avg.	40 mg./l.	42 mg./l.
Suspended Solids, 7-Day avg.	45 mg./l.	51 mg./l.
Fecal Coliform Bacteria, 7-Day avg.	400 cts./100 ml.	18,955 cts./100 ml.
Fecal Coliform Bacteria, 30-Day avg.	200 cts./100 ml.	449 cts./100 ml.

It was originally believed that these effluent violations were due to

1) A discharge of sodium hydroxide from BASF, an industry served by the plant

2) A final clarifier scraper arm that broke off due to frozen floating sludge.

Since it was felt this was an isolated event no outside consultant was contacted for assistance. Subsequently, the problems have been re-evaluated based on the nutrient deficiency issue, which affected plant performance for the March – May period. It's now believed that nutrient deficiency because of Airport glycol loadings was the likely cause (or at least a major contributing factor) to effluent violations for January 2003. This conclusion is based on the similar conditions for the two periods, and the glycol loads being received prior to the periods of non-compliance.

February 2003

The WWTP was in compliance with all its N.P.D.E.S. permit limits during the month of February 2003.

March 2003

The Downriver WWTP did not meet the N.P.D.E.S. permit limits for the parameters listed below, during March 2003.

PARAMETER	LIMIT	ACTUAL
CBOD ₅ , 7-Day avg.	40 mg/l.	53 mg/l.
CBOD ₅ , 30-Day avg.	25 mg/l.	26 mg/l.
Suspended Solids, 7-Day avg.	45 mg/l.	135 mg/l.
Suspended Solids, 30-Day avg.	30 mg/l.	58 mg/l.
Total Suspended Solids Maximum Loading - 7-Day	47,000 Lbs./Day	75,302 Lbs./Day
Total Suspended Solids Maximum Loading - 30-Day	31,000 Lbs./Day	31,524 Lbs./Day
Total Suspended Solids Minimum % Removal	85%	73%

These violations developed as a result of poor settling of the activated sludge in the secondary treatment process. This condition began during first week of March.

At this point, the Downriver WWTP began to look into hiring an outside consultant to help with the investigation of cause(s) of the problem. It was concluded that to save time in procurement, David A. Flowers, P.E. a wastewater treatment specialist who is familiar with the Downriver plant and already under contract with the plant would be used.

Mr. Flowers visited the plant between March 18 – March 28, 2003 to evaluate the plant operation and collect some data.

On March 18, 2003, Wayne County received a letter from Mr. Osama Khaimi of Michigan Department of Environmental Quality, requesting more information and "an adequate and comprehensive investigation to determine the cause of the permit violations for the month of January 2003". In a meeting to discuss the content of this letter with MDEQ, the plant staff agreed to furnish charts indicating the goals for various operating parameters. It was also agreed that as long as the plant meets its N.P.D.E.S. permit, it is not necessary to explain reasons for deviating from these goals. Some of these goals may be changed to reach desired operational outcomes. A sample of one these charts for the month of April 2004 can be found in Appendix 1.

April 2003

The Downriver WWTP did not meet the N.P.D.E.S. permit limits for the parameters listed below, during April 2003.

PARAMETER	LIMIT	ACTUAL
Suspended Solids, 7-Day avg.	45 mg/l.	69 mg/l.
Suspended Solids, 30-Day avg.	30 mg/l.	47 mg/l.
7-Day Fecal Coliform Bacteria	400 ct. / 100 ml.	424 ct. / 100 ml.
Total Suspended Solids Maximum Loading - 7-Day	47,000 Lbs./Day	55,701 Lbs./Day
Total Suspended Solids Minimum % Removal	85%	79%

The violations continued as a result of the prior month's problems with poor settling characteristics of the sludge in the secondary treatment process.

Mr. Flowers' first official report was received on April 16, 2003. This report can be found in "Appendix 2". Mr. Flowers made the following three observations in his report of April 16, 2003:

- 1) Toxicity – He concluded that toxicity does not appear to be an issue. He also recommended that online pH probes to be installed on the primary and secondary effluent. At this point, since plant staff felt that glycol, not a chemical spill, was the cause of the January problem, online cBOD and online Phosphorus analyzers would be a better investment for the plant.
- 2) Nitrification/Denitrification – Mr. Flowers noted that this phenomenon might partially be the cause of the problem. He stated one key control mechanism to reduce the effect of nitrification is to reduce the number of settling and aeration tanks online when the flows are lower. This was attempted during the second half of April by taking one aeration tank offline. In addition a secondary clarifier was already out of service for maintenance. However, at beginning of May it was necessary to put the aeration train back online due to high flows.
- 3) Nutrient Deficiency – Mr. Flowers indicated that there might be a deficiency in the concentration of phosphorus in the secondary treatment units. He believed that reducing the amount of ferric chloride added to the plant influent to remove phosphorus would increase phosphorus reaching secondary treatment. This was tried by turning the ferric off during April 18-26, however increased phosphorus values of over 1.0 mg/l (permit limit) in the effluent forced this trial to be abandoned.

The Downriver WWTP worked with Mr. Flowers to identify the cause of these conditions and find a remedy. Mr. Flowers made several recommendations, some of which the WWTP has implemented. These recommendations did not produce immediate results but by late April, conditions appeared to be improving slowly.

May 2003

The Downriver WWTP continued to have problems and did not meet the N.P.D.E.S. permit limits for the parameters listed below, during May 2003.

PARAMETER	LIMIT	ACTUAL
CBOD ⁵ 7-Day avg.	40 mg	51 mg
Suspended Solids, 7-Day avg.	45 mg	89 mg

Suspended Solids, 30-Day avg.	30 mg	51 mg
Fecal Coliform Bacteria 7-Day avg.	400 ct./100 ml	1,964 ct./100 ml
Fecal Coliform Bacteria 30-Day avg.	200 ct./100 ml	261 ct./100 ml
Total Phosphorus	1.0 mg/l	1.1 mg/l
CBOD ⁵ Maximum Loading - 7-Day	42,000 Lbs./Day	42,754 Lbs./Day
Total Suspended Solids Maximum Loading - 7-Day	47,000 Lbs./Day	74,009 Lbs./Day
Total Suspended Solids Maximum Loading - 30-Day	31,000 Lbs./Day	35,228 Lbs./Day

It was felt that the violations were a continuation of the same problems that occurred in April, which were poor settling characteristics of the sludge in the secondary treatment process.

On May 2, 2003, staff responded to Mr. Khaimi's request for a comprehensive report on January 2003 exceedances. This response included a cover letter and a 12-page investigation report by Mr. Flowers. This Investigation report was called "Wyandotte POTW Investigation of Effluent Excursions - January 2003" and can be find in "Appendix 3".

Mr. Flowers noted "the above excursions (January 2003) occurred probably because of severe biosolids loss from the secondary system". Although this was a true statement, we believed that the floating biosolids on the final clarifiers, which may have occurred due to glycol and nutrient deficiency, was the start of sequence that ended with loss of biosolids from the secondary system. Another contributing factor to the loss of biosolids was our inability to close the No. 4 clarifier inlet valve. This valve is and always has been included in the WWTP's "Computerized Maintenance Management System" and routine maintenance is performed on it as follows:

- 1) CLEAN AND LUBE VALVE STEM
- 2) CHECK FOR MOISTURE
- 3) INSPECT & CLEAN ELECT. PARTS

Corrective maintenance was performed on the clarifier inlet valve to allow proper closure, and it has subsequently operated properly.

June 2003

The Downriver WWTP was in compliance with all its N.P.D.E.S. permit limits during the month of June 2003.

On June 10, 2003 David Flowers wrote a final letter to Ms. Beth Gotthelf, Re: Update on Wyandotte Wastewater Treatment Plant Settling Issues". In this letter, Mr. Flowers focused on nutrient deficiency and stated that phosphorus deficiency appears to be the cause of the problem. He stated that given the fact that it takes approximately 60 to 90 days to fully recover after correcting the nutrient deficiency that caused the settling problem, he recommended that the plant continue to sample and monitor as indicated in the April 16, 2003 letter and monitor plant's improvements. This report can be found in Appendix 4.

To obtain a second opinion on ongoing settling problems with the secondary process, on June 12, 2003, staff collected a sample of mixed liquor and sent it to Dr. David Jenkins for his microscopic analysis. This evaluation indicated that the activated sludge contained firm, round compact flocs and should be settling well. The overall filamentous organism level was "common" which is not sufficient to cause a settling problem. However, by the time this sample was taken, the discharge of glycol had ceased from the Airport and therefore no settling problem was discernable. A copy of this report can be found in Appendix 5.

On June 19, 2003 at the Downriver Technical Committee meeting it was recommended that a joint Airport/Downriver System glycol evaluation be performed. The purpose of this evaluation was to assist plant staff in identifying the cause of last few months' exceedances. It was agreed that the Detroit Metropolitan Airport would pay half of the cost and Wayne County would pick up the other half of the cost, since there was an apparent cause and effect relationship between discharges of glycol from the Airport and plant performance.

July 2003

The Downriver WWTP was in compliance with all its N.P.D.E.S. permit limits during the month of July 2003.

In late July, pursuant to the June 19, 2003 Downriver Technical meeting a Request for Proposal and scope of service for the glycol evaluation was prepared and three prospective consultants were contacted.

August 2003

The Downriver WWTP did not meet the N.P.D.E.S. permit limits for the parameters listed below, during August 2003.

PARAMETER	LIMIT	ACTUAL
CBOD ⁵ 7-Day avg.	40 mg/l	55 mg/l. 8/15/03 – 8/21/03
Suspended Solids, 7-Day avg.	45 mg/l.	112 mg/l. 8/15/03 – 8/21/03
Suspended Solids, 30-Day avg.	30 mg/l.	49 mg/l.
Fecal Coliform Bacteria 7-Day avg.	400 ct./100 ml.	4,817 ct./100 ml. 8/21/03 – 8/27/03
Fecal Coliform Bacteria 30-Day avg.	200 ct./100 ml.	498 ct./100 ml.
Total Phosphorus	1.0 mg/l	1.2 mg/l.
Total Suspended Solids Maximum Loading - 7-Day	47,000 Lbs./Day	53,275 Lbs./Day
Dissolved Oxygen	4.0 mg/l (Daily Minimum)	8/15/03 : 1.6 8/16/03 : 1.3 8/17/03 : 0.0 8/18/03 : 1.0 8/19/03 : 3.4 8/20/03 : 1.0 8/21/03 : 0.3 8/22/03 : 0.4 8/26/03 : 3.2

The Downriver WWTP was experiencing problems with suspended solids during the first week of August. This problem was a result of revised operational procedures, which were instituted on a trial basis to optimize sludge withdrawal. However, the operational changes were unsuccessful in that the primary solids became too old and became septic, thus triggering problems, which would have exceeded the 7-day TSS standard for the first week of the month. The changes were abandoned and the process was returning to normal when plant operations were totally disrupted by a major power outage.

The rest of the noncompliances during August were due to electrical power loss, which occurred for the entire Downriver area at approximately 4:10 PM on Thursday, August 14, 2003. The Downriver WWTP was unable to pump or

treat wastewater flows for approximately 22 hours. The PraxAir oxygen supply to the secondary (biological) treatment system also ceased as a result of the power outage. Interceptor flow and level telemetry was also inoperative due to the power loss.

WWTP Influent Pump Station (IPS) wetwell and Tunnel Pump Station (TPS) wetwell levels were manually monitored. Levels continuously rose overnight and through the morning.

Wayne County administration called several local generator rental companies but nothing was available of the required size. Portable pumps were requested, and were available on site when power was restored.

Power was re-established at approximately 1:45 p.m. on Friday, August 15. WWTP IPS pumps were immediately activated in a sequential starting operation to dewater the interceptor system. A pumping rate of 115 MGD was quickly achieved and provided sufficient capacity to bring interceptor levels within normal ranges.

Reestablishing the electrical power enabled the pumping of the wastewater out of the sewer system but treatment processes did not respond in a similar fashion. The WWTP's oxygen supply was brought back on Saturday, August 16, when power was restored to Praxair plant in Ecorse. Due to high LEL (Lower Explosive Limit) levels on the aeration deck (a result of the combustible gases produced by the septic sludge) it was not safe to actually apply oxygen until Monday, August 18.

Though no physical damage occurred to WWTP equipment, the plant's treatment processes suffered significant harm during the power outage. Particularly, the secondary treatment process which required extensive reseedling with active microbes. This reseedling required two weeks before a fully functioning secondary treatment system was achieved. Arrangements were made with the Detroit Water and Sewerage Department to obtain microbes from their secondary treatment process. The Downriver WWTP received 90,000 gallons of activated sludge from DWSD over a 3-day period.

The WWTP's sludge inventory became septic due to lack of flow and oxygen. The septic sludge was very difficult to dewater, therefore, the sludge inventory did not drop as rapidly as was anticipated.

The effectiveness of the UV disinfection system was reduced due to the higher effluent solids levels. As solids quantities in the effluent declined, the effectiveness of the UV improved. By the end of August, Final effluent quality had returned to normal levels.

On August 1, 2003 three proposals were received for the glycol evaluation. After reviewing the three proposals it was recommended that the team of Dr. Jenkins/Dr. Hernandez be awarded the contract. Dr. Jenkins is a nationally known and the leading expert in the area of secondary processes and Dr. Hernandez' is an expert in the area of glycol treatment.

September 2003

The Downriver WWTP had one exceedance of the N.P.D.E.S. permit during the month of September 2003.

PARAMETER	LIMIT	ACTUAL
Fecal Coliform Bacteria, 7-Day avg.	400 ct. / 100 ml.	633 ct. / 100 ml.

At the time of this noncompliance, plant staff felt that a combination of three contributing factors caused this violation. The three factors included the possibility of an exo-cellular polymer (ECP) layer on the secondary treatment microorganisms due to nutrient deficiency, lack of oxygen for part of one day due to problem in the supplier's transmission system, and finally increased plant flow due to heavy rain in mid-September.

Dr. Jenkins and Dr. Hernandez traveled to the site and began their investigative work on September 4, 2003.

October 2003

The Downriver WWTP did not meet the permit limitations for the following parameters during the month of October 2003:

PARAMETER	LIMIT	ACTUAL
Fecal Coliform Bacteria 7-Day avg.	400 ct./100 ml.	15,208 ct./100 ml.
Fecal Coliform Bacteria 30-Day avg.	200 ct./100 ml.	2,682 ct./100 ml.

The Downriver WWTP continued to have exceedances of the fecal coliform bacteria limitations from the previous month. The secondary mixed liquor continued to show signs of ECP, but the condition was improving.

Samples of the final effluent were sent to Trojan Technologies (Manufacturer of the UV system). Trojan Technologies ran a collimated beam test to determine if the wastewater sample had interference, which would obstruct the UV light. Trojan did not find any problem that hindered UV transmission or effectiveness in this sample. It was felt that this was a representative sample.

The plant staff took other measures to eliminate any other possible causes. High suspended solids did not seem to be a factor since daily sampling indicated Total Suspended Solids in the effluent was well within the permit limitations. The channel gates were inspected to determine if there were leaks occurring on channels that were out of service. Minimal gate leakage was noted. To rule this problem out, the plant began draining channels when they were not in service. This did not improve the effluent fecal results.

Laboratory personnel performed additional fecal coliform testing on each individual channel in addition to the common effluent channel. There were no significant differences in the results from these locations.

Ferric chloride was suspected since the ferric feed rate had been increased (7 mg/l) due to the effluent phosphorus numbers over 1.0 mg/l from October 6 to 11. Ferric chloride feed was subsequently returned to a lower setting (2 mg/l) around October 13. This did not improve the condition.

Based on this information, it appeared that the cause of the problem might be attributable to poor performance of the wiper assemblies, which clean the UV lamps. The wiper assemblies contain a cleaning solution, which removes deposits on the lamps. Although the wiper assemblies were being replaced in accordance with the manufacturer's recommendations, it appeared that more frequent replacement of these units might be needed to maintain performance at expected levels. Plant staff had observed worn seals, which may be allowing the cleaning solution to leak out and form deposits on the quartz sleeves, thus reducing the lamps effectiveness. Under normal operation, maintenance personnel had been performing monthly hand cleaning of the lamp sleeves, but the manual cleaning frequency was increased to every 3 or 4 days. This manual cleaning cycle reduced the amount of the deposits on the UV bulbs.

A purchase request for replacement of wiper assembly parts was given emergency approval at the end of October. The parts arrived on November 8th. All worn wiper assemblies were replaced on channel #1. Staff continued to replace worn parts on all other channels. It was anticipated that system function

would return to normal once the new wiper assemblies were installed and cleaning gel refilled. The replacement of most of the new wiper assemblies finally solved the fecal coliform noncompliance problem, and the UV disinfection system has been performing satisfactorily since the replacement wiper assemblies were installed.

November 2003

The Downriver Wastewater Treatment Plant was in compliance with all its NPDES permit limits during the month of November 2003.

O November 11, 2003, Dr. Jenkins/Dr. Hernandez finalized their report on the effect of glycol on the Downriver Wastewater Treatment plant. This report can be found in Appendix 6.

On page 5 of this report it was noted " the effluent quality in terms of cBOD₅, TSS, TP and fecal coliform is most likely to be best during the period Jun through Nov and can deteriorate during the months of Dec through May. Deterioration of final effluent quality at the WWTP has been associated with presence of activated sludge that settles poorly – a condition commonly known as sludge bulking." They conclude that sludge bulking is caused by two principle factors. The reduction in plant recycle TSS is the reason for long-term increase trend in sludge bulking. The reduction in plant recycle TSS was the result of many plant renovation projects and better sludge management and disposal. The formation of viscous exocellular material by the microorganisms is the cause of seasonal sludge bulking during the glycol season due to phosphorus nutrient deficiency.

On page 11, they explain that to provide satisfactory activated sludge treatment of wastewater and to produce an activated sludge with acceptable settling, sufficient phosphorus (P) must be provided. The P requirements of activated sludge are usually expressed in terms of the amount of P needed to treat a given amount of BOD₅. They believe that a primary effluent cBOD₅/P ratio of no higher than approximately 40/1 can be tolerated without experiencing P deficiency.

The study conclusion can be found on pages 20-22 of the Dr. Jenkins/Dr. Hernandez report. (Appendix 6)

Recommendations – The report makes seven recommendations as follows:

- (i) Sufficient available P needs to be supplied to the activated sludge. This could be achieved by manipulating ferric dose to the raw wastewater.

Action: This recommendation was fully implemented and a graph is produced to track the 40/1 ratio of cBOD/P in primary effluent (Figure 1)

- (ii) Only gradual changes (<1,000 lbs.) in daily glycol discharge rate should be allowed.

Action: This was implemented through item e on page 5 of 17 of the permit issued to the Detroit Metro Airport. See Appendix 7.

- (iii) Discharge of concentrated glycol to the Eureka sewer should be prohibited.

Action: This was implemented through item c on page 5 of 17 of the Airport discharge permit (Appendix 7)

- (iv) Current practice of monitoring and adjusting glycol discharge should be continued if satisfactory results could be obtained.

Action: This procedure has continued and no changes have been made.

- (v) The plant laboratory should conduct sufficient number of cBOD₅ and ultimate BOD analyses on glycol and plant primary effluent to ensure that satisfactory valid conclusions can be drawn.

Action: This was completed and no significant differences were detected between cBOD₅/ultimate BOD ratio for plant primary effluent without glycol versus glycol.

- (vi) During the first year of operating in this mode the maximum glycol discharge to the plant should be limited to the amount that can be satisfactorily treated without any supplemental phosphoric acid addition.

Action: This recommendation was implemented and no problems were experienced.

- (vii) An online phosphorus analyzer should be installed to provide direct measurement of the soluble P concentration in primary effluent. The instrument should be set up to provide alarms at both high (>0.4 mg/l) and low (<0.2 mg/l).

Action: This analyzer has been purchased and installed.

manufacturer of our UV equipment has been very helpful, some quality issues with their wiper assemblies and lamps may have caused some difficulties for us. During a recent meeting they have conveyed to us that their quality control issues have been addressed and one supplier of inferior lamps has been removed from their supplier list.

3. **Blackout of 2003 was the cause of our permit violations for the month of August 2003.** The only exceedance that was not related to power outage for August 2003 was a 7-day TSS. The Downriver System is preparing to undertake a capital improvements program as part of the SRF Project Plan which includes recommendations for emergency generators to minimize the vulnerability of the plant to power outages should there be a recurrence of the August blackout.

The Jenkins/Hernandez report, dated November 11, 2003 is the only report that provided clear recommendations. These recommendations were fully implemented and provided a violation free glycol season (2003 – 2004).

Staff believes that both glycol and UV equipment issues have been addressed satisfactorily. Since October of 2003 there have been no exceedance. Staff is in the process of putting a contingency plan together for any future blackouts. This plan will reduce the possibility of total loss of microorganisms in case of a relatively long (up to 24 hours) power outage.

Table
1

Table 1

Downriver Wastewater treatment Plant Compliance Summary

DOWNRIVER WASTEWATER PLANT COMPLIANCE STATUS SUMMARY

This document summarizes the compliance history of the Downriver Wastewater Treatment Plant after the completion of the improvements mandated by the 1994 Consent Decree through March, 2004.

MONTH/YEAR	EFFLUENT PARAMETERS EXCEEDED	COMMENT
June, 2002	None	In Compliance
July, 2002	None	In Compliance
August, 2002	None	In Compliance
September, 2002	None	In Compliance
October, 2002	None	In Compliance
November, 2002	None	In Compliance
December, 2002	None	In Compliance
January, 2003	CBOD (7d); TSS (7d); Fecal Coli (7d, 30d)	Broken scraper arm & secondary valve failure; BASF release (it was concluded at a later time that glycol and nutrient defic. was the cause, rather than BASF)
February, 2003	None	In Compliance
March, 2003	CBOD (7d, 30d); TSS (7d, 30d), TSS loading (7d, 30d), TSS% removal	Glycol loading; nutrient defic.
April, 2003	TSS (7d, 30d); Fecal Coli (7d), TSS loading (7d), TSS% removal	Glycol loading; nutrient defic.
May, 2003	CBOD (7d); TSS (7d, 30d); Fecal Coli (7d, 30d); P (30 d), CBOD loading (7d)	Glycol loading; nutrient defic.
June, 2003	None	In Compliance
July, 2003	None	In Compliance
August, 2003	CBOD (7d); TSS (7d, 30d); Fecal Coli (7d; 30d); P (30d); 9 ea. D.O. (daily), TSS loading (7d)	Power Outage (Blackout) TSS (7d) was due to primary tanks sludge thickening experiment
September, 2003	Fecal Coli (7d)	Increased ferric feed to correct high P caused nutrient defic. and UV System slime build up (at a later time, UV lamps wiper assemblies were found to be the cause of this problem)
October, 2003	Fecal Coli (7d, 30d)	Problems with UV lamps wiper assemblies
November, 2003	None	In Compliance
December, 2003	None	In Compliance
January, 2004	None	In Compliance
February, 2004	None	In Compliance
March, 2004	None	In Compliance
April, 2004	None	In Compliance

Figure
1

Final Effluent Soluble Phosphorus

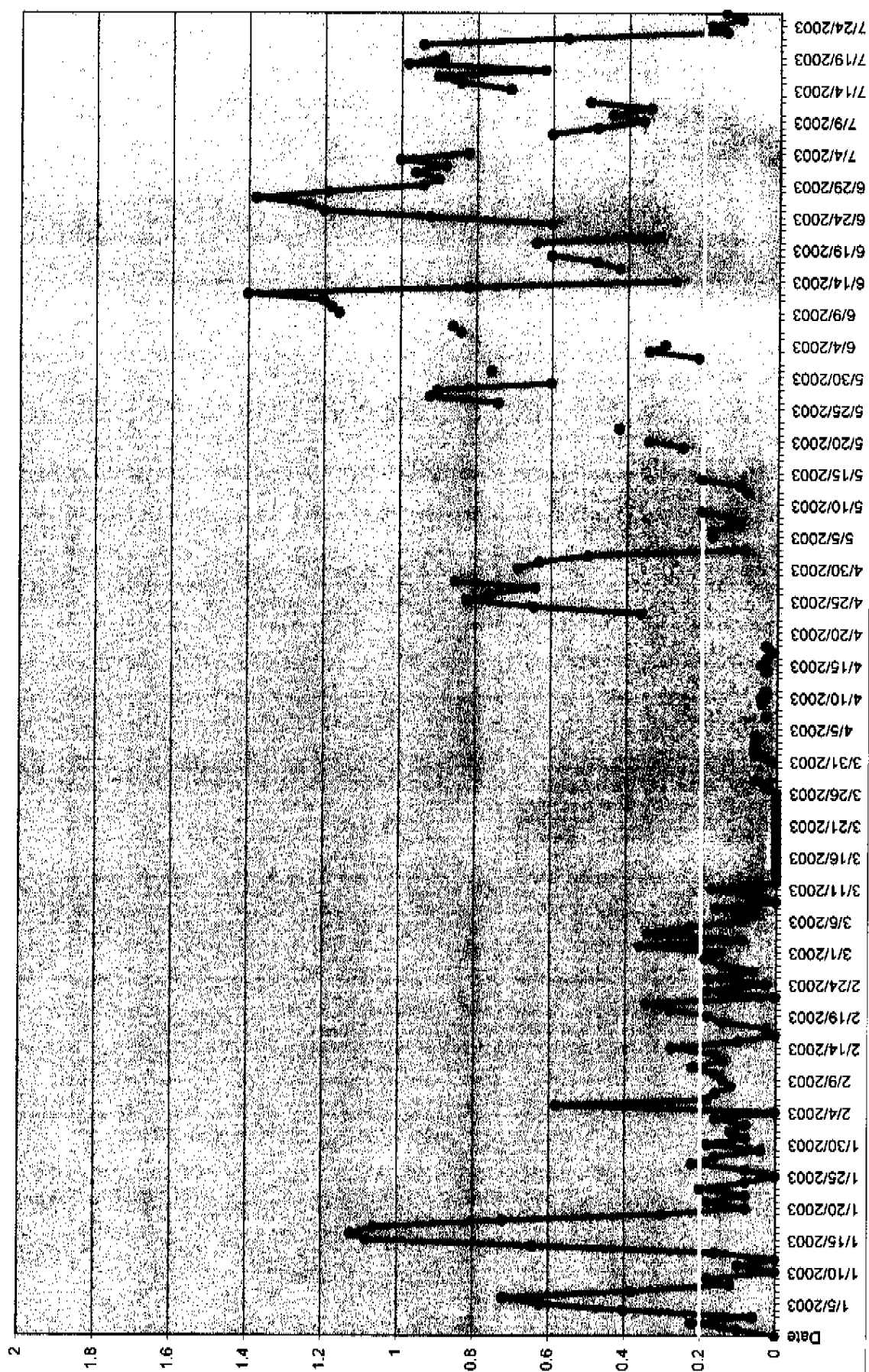
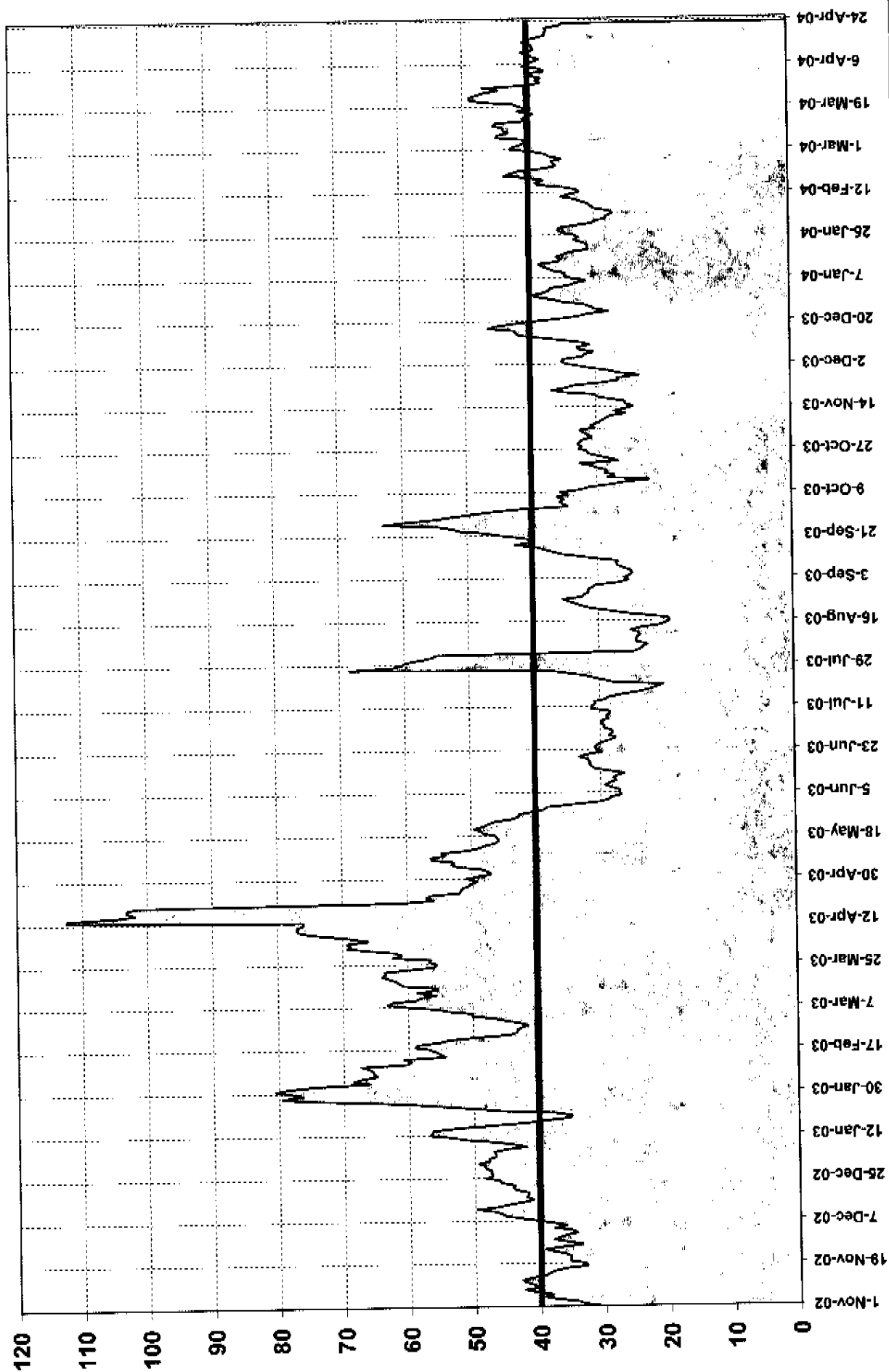


Figure
2

Figure 2

Final Effluent soluble Phosphorus

Primary Eff cBOD/P (7-day Avg.) Ratio



Appendix

1

Appendix 1

Monthly Goal Charts